Test Bank
Chapter 2: Representations of Earth

Multiple Choice

1. A rhumb line on a Mercator projection is a line of ____.
   a. true size
   b. true shape
   c. true compass bearing
   d. true location

2. Maximum longitude from the prime meridian is ____.
   a. 180° N and 180° S
   b. 90° E and 90° W
   c. 90° N and 90° S
   d. 180° E and 180° W

3. Computer-assisted mapping ____.
   a. is problematic in terms of making revisions
   b. is used primarily by research scientists
   c. can collect data almost instantaneously
   d. must be verified by field surveys

4. The world's time zones were established based on the relationship among:
   a. latitude, Earth's rotation, and time
   b. longitude, Earth's rotation, and time
   c. latitude, Earth's revolution, and time
   d. longitude, Earth's revolution, and time

5. The computer-based technology that represents a "marriage" between computer cartography and database management is ____.
   a. spatial analysis
   b. the geographic information system (GIS)
   c. spectral analysis
   d. the multispectral scanner

6. A map capable of showing true direction is called a(n) ____.
   a. focal map
   b. planar map
   c. Mercator map
   d. azimuthal map

7. A key factor in digital images is spatial resolution, expressed as how much area each ____ represents.

   a. degree
   b. byte
   c. pixel
   d. focal point

8. The primary purpose of a map is:
   a. spatial and locational communication
   b. navigation
   c. realistic depiction of Earth's -boundaries
   d. data collection

9. Maximum latitude is reached at the:
   a. prime meridian
   b. North and South Poles
   c. Tropics of Capricorn and Cancer
   d. equator

10. Magnetic declination is:
    a. the angular difference between magnetic north and the Arctic Circle
    b. the angular difference between magnetic north and true geographic north
    c. the angular difference between magnetic north and the prime meridian
    d. the angular difference between magnetic north and the equator

11. The Mercator map is actually a(n) ____ type of projection that has been mathematically derived.
    a. conic
    b. cylindrical
    c. planar
    d. interrupted

12. A map with an RF scale ____.

    a. will be inaccurate if the original map is enlarged
    b. uses graduated lines
    c. has a small denominator in its representative fraction
    d. is free of units of measurement

13. Maps of middle latitudes are typically based on what type of projection?
    a. planar
    b. conic
    c. cylindrical
    d. Mercator

14. Contour maps ____.
    a. provide the reader with an idea of the lay of the land
    b. are also referred to as "dot maps"
    c. show distribution of any feature on Earth's surface
    d. are used to show lines of equal temperature

15. A degree of latitude is subdivided into ____.
    a. centitudes and millitudes
    b. hours, minutes, and seconds
    c. minidegrees
    d. minutes and seconds

16. Which type of scale is most likely to mix units?
    a. representative fraction scale
    b. verbal scale
    c. graphic scale
    d. bar scale

17. Near-infrared energy is ____.
    a. radiated heat energy
    b. sound waves
    c. red
    d. light reflected off surfaces

18. In the Public Lands Survey System, one section equals ____.
    a. 36 square miles
    b. 6 square kilometers
    c. 640 acres
    d. 120 hectares

19. Which of the following is an active remote sensing system that transmits pulses of energy to measure distance?
    a. near-infrared
    b. lidar
    c. aerial photography
    d. thermal infrared

20. Lines of latitude are also called ____.
    a. arcs
    b. parallels
    c. meridians
    d. routes

21. Any circle on Earth that does not divide the planet into equal halves is called a(n) ____.
    a. phased circle
    b. small circle
    c. subcircle
    d. partial circle

22. Contour lines on a topographic map connect ____.
    a. points that are the same elevation
    b. points on the same road
    c. points that have the same vegetation cover
    d. points that have the same slope

23. Weather radar systems are mainly designed to track and monitor ____.
    a. wind speed and directions on clear and stormy days
    b. thunderstorms, hurricanes, or tornadoes
    c. temperature patterns in the atmosphere
    d. the patterns of the currents in Earth's oceans

24. Why are digital images generally used instead of photographs in satellite remote sensing?
    a. Digital images are protected from the possibility of sharing sensitive data.
    b. Digital images have a fixed resolution.
    c. Digital images are processed once, simultaneously as they are taken.
    d. Digital image data can be beamed back electronically from space, and can reproduce a wider part of the spectrum than photos can.

25. A great circle:
    a. divides Earth into two planes of any size
    b. is the dividing line between day and night
    c. connects the Tropic of Cancer and the Tropic of Capricorn
    d. divides Earth into two equal halves

26. Persons traveling west across the International Date Line must ____.
    a. turn their calendar back one day
    b. turn their calendar ahead one day
    c. turn their watch 12 hours ahead
    d. turn their watch 12 hours back

27. Three-dimensional views of elevation data are called ____.
    a. visualization models
    b. GISs
    c. digital elevation models
    d. raised projections

28. Mercator maps show the greatest amount of distortion in the ____.
    a. polar region
    b. middle latitudes
    c. equatorial region
    d. oceans

29. The time of day when the sun reaches its highest position in the sky is called ____.
    a. lunar shift
    b. solar noon
    c. Zulu time
    d. solar plexus

30. Which remote sensing system provides the best image of cloud heights, as well as ocean currents and volcanic hot spots?
    a. near-infrared photography
    b. weather radar
    c. imaging radar
    d. thermal infrared imaging

True-False

1. Longitude is measured in degrees east or west of the prime meridian.

   True False

2. Remote sensing is the collection of information and data about distant objects or environments.

   True False

3. Verbal scales are applicable even if a map is enlarged or reduced.

   True False

4. Photography is a type of remote sensing.

   True False

5. Latitude determines a point's location north or south of the equator.

   True False

6. Thematic maps portray land surface and elevational information.

   True False

7. Of all the regions of the U.S., the landscapes of the West and Midwest have been affected the least by the Public Lands Survey System.

   True False

8. The International Date Line generally follows the 180th meridian.

   True False

9. Until about 125 years ago, each town or area went by "local time" determined by shadows cast by the sun.

   True False

10. One characteristic of a "great circle" is that it must pass through both the north and south poles.

    True False

11. The Global Positioning System (GPS) uses a network of satellites to accurately determine one's location on Earth's surface.

    True False

Fill-in-the-Blank

1. The _____ is the arbitrary starting point for longitude measurement.

2. The time difference between Chicago and Greenwich, England is _____ hours (include plus or minus hours).

3. _____ refers to the relationship between distances on Earth to distances on the map.

4. A key that explains symbols used on a map is called a(n) _____.

5. Maps that maintain true shape of small areas are said to be _____.

6. The angular difference between true north and magnetic north is called _____.

7. The _____ system of direction is given in degrees of a circle with respect to north and is used for military and navigational purposes.

8. The _____ is used as the starting point for measuring latitude.

9. In the Public Land Survey System, _____ defines a point east or west of a principal meridian and _____ defines a point north or south of a base line.

10. An aerial photograph taken at an acute angle to Earth's surface is known as a(n) _____ image.

Essay

1. Describe the factors that cause the Earth's shape to depart from true sphericity.

2. Explain conformal, equal-area, and compromise world maps in terms of their advantages and drawbacks. What are some of the applications for each type of map?

3. How are computers, remote sensing imagery, and GISs used to increase our ability to analyze spatial information, data, distributions, and relationships? Explain with a specific example.

Chapter 2 Test Bank Answer Key

Learning Objectives:
LO1: Explain the ways that Earth and its regions, places, and location can be represented on a variety of visual media: maps, aerial photographs, and other imagery.
LO2: Assess the nature and importance of maps and maplike presentations of the planet or parts of Earth, citing some examples.
LO3: Find and describe the locations of places using coordinate systems, use topographic maps to find elevations, and understand the three types of map scales.
LO4: Demonstrate knowledge of techniques that support geographic investigations, including mapping, spatial analysis, satellite and aerial photography.
LO5: Evaluate the advantages and limitations of different kinds of representations of Earth and its areas.
LO6: Understand how the proper techniques, images, and maps can be used to best advantage in solving geographic problems.
LO7: Recognize the benefits of spatial technologies such as geographic information systems (GIS), the Global Positioning System (GPS), and remote sensing.

Multiple Choice

1.	c	LO5	11.	b	LO5	21.	b	LO3
2.	d	LO3	12.	d	LO5	22.	a	LO7
3.	c	LO2	13.	b	LO5	23.	b	LO4
4.	b	LO3	14.	a	LO5	24.	d	LO1
5.	b	LO6	15.	d	LO3	25.	d	LO3
6.	d	LO5	16.	b	LO3	26.	b	LO3
7.	c	LO7	17.	d	LO1	27.	c	LO7
8.	a	LO1	18.	c	LO3	28.	a	LO5
9.	b	LO3	19.	b	LO7	29.	b	LO3
10.	b	LO3	20.	b	LO3	30.	d	LO7

True-False

1.	T	LO3	7.	F	LO3
2.	T	LO7	8.	T	LO3
3.	F	LO1	9.	T	LO2
4.	T	LO7	10.	F	LO3
5.	T	LO3	11.	T	LO7
6.	F	LO5			

Fill-in-the-Blank

1.	prime meridian	LO3
2.	+ 6	LO3
3.	Scale	LO1
4.	legend	LO1
5.	conformal	LO1
6.	magnetic declination	LO3
7.	azimuth	LO3
8.	equator	LO3
9.	range; township	LO3
10.	oblique	LO4